



009848-0276371

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of:)	Group Art Unit: 1642
PETER KUFER, et al)	Examiner: NYA
Serial No.:)	
09/744,625)	
Filed:)	
JULY 16, 2001)	
Title:	HETEROMINIBODIES	

STATEMENT TO SUPPORT FILING AND SUBMISSION
IN ACCORDANCE WITH 37 C.F.R. §1.821-1.825

United States Patent and Trademark Office
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Dated: 4/26/02

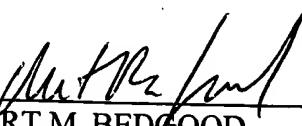
By: SUZANNE L. SIMPSON

70017477V1

Applicant respectfully submits that the content of the sequence listing information recorded in computer readable form is identical to the written sequence listing and includes no new matter.

Respectfully submitted,

Pillsbury Winthrop LLP

By: 

ROBERT M. BEDGOOD

Reg. No.: 43,488

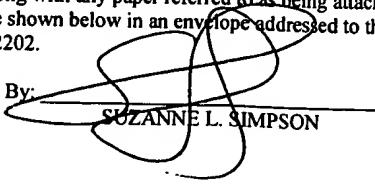
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Dated: 4/26/02

By: 

SUZANNE L. SIMPSON

70017477V1



SEQUENCE LISTING

<110> Peter Kufer
Torsten Dreier
Patrick A. Baeuerle
Katrin Borschert
Florian Zettl

<120> Heteromini bodies

<130> 009848/027 6371

<140> 09/744,625

<141> 2001-07-16

<150> EP 98 11 4082.5

<151> 1998-07-28

<160> 39

<170> PatentIn Ver. 2.1

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<211> 36
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 Ala Thr Gly Val His Ser Asp Ile Val Val Thr Gln Glu Ser Ala Leu
 15 20 25

acc aca tca cct ggt gaa aca gtc aca ctc act tgt cgc tca agt act 145
 Thr Thr Ser Pro Gly Glu Thr Val Thr Leu Thr Cys Arg Ser Ser Thr
 30 35 40 45

ggg gct gtt aca act agt aac tat gcc aac tgg gtc caa gaa aaa cca 193
 Gly Ala Val Thr Thr Ser Asn Tyr Ala Asn Trp Val Gln Glu Lys Pro
 50 55 60

gat cat tta ttc act ggt cta ata ggt ggt acc aac aac cga gtt cca 241
 Asp His Leu Phe Thr Gly Leu Ile Gly Gly Thr Asn Asn Arg Val Pro
 65 70 75

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Gly Val Pro Ala Arg Phe Ser Gly Ser Leu Ile Gly Asp Lys Ala Ala		
80	85	90
ctc acc atc aca ggg gca cag act gag gag gca ata tat ttc tgt		337
Leu Thr Ile Thr Gly Ala Gln Thr Glu Asp Glu Ala Ile Tyr Phe Cys		
95	100	105
gct cta tgg tac agc aac cat tgg gtg ttc ggt gga gga acc aaa ctc		385
Ala Leu Trp Tyr Ser Asn His Trp Val Phe Gly Gly Thr Lys Leu		
110	115	120
125		
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Glu Val Leu Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly		
130	135	140
ggt tct cag gtc cag ctg cag gag tct gga cct ggc ctg gtg gcg ccc		481
Gly Ser Gln Val Gln Leu Glu Ser Gly Pro Gly Leu Val Ala Pro		
145	150	155
tca cag agc ctg tcc atc aca tgc acc atc tca ggg ttc tca tta act		529
Ser Gln Ser Leu Ser Ile Thr Cys Thr Ile Ser Gly Phe Ser Leu Thr		
160	165	170
aag tat ggt gta cac tgg gtt cgc cag cct cca gga aag ggt ctg gag		577
Lys Tyr Gly Val His Trp Val Arg Gln Pro Pro Gly Lys Gly Leu Glu		
175	180	185
tgg ctg gtg gtg ata tgg act gat gga ggc aca tcc tat aat tca gct		625
Trp Leu Val Val Ile Trp Thr Asp Gly Gly Thr Ser Tyr Asn Ser Ala		
190	195	200
205		
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Leu Lys Ser Arg Leu Ser Ile Ser Lys Asp Asn Ser Lys Ser Gln Val		
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ttc tta aaa atg aac agt ctc caa act gat gac aca gcc atg tac tac		721
Phe Leu Lys Met Asn Ser Leu Gln Thr Asp Asp Thr Ala Met Tyr Tyr		
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Cys Ala Arg Gln Asp Arg Tyr Asp Gly Gly Ile Ala Tyr Trp Gly Gln		
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Pro Gly Glu Thr Val Thr Leu Thr Cys Arg Ser Ser Thr Gly Ala Val
35 40 45

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50 55 60

Phe Thr Gly Leu Ile Gly Gly Thr Asn Asn Arg Val Pro Gly Val Pro
65 70 75 80

Ala Arg Phe Ser Gly Ser Leu Ile Gly Asp Lys Ala Ala Leu Thr Ile
85 90 95

Thr Gly Ala Gln Thr Glu Asp Glu Ala Ile Tyr Phe Cys Ala Leu Trp
100 105 110

Tyr Ser Asn His Trp Val Phe Gly Gly Thr Lys Leu Glu Val Leu
115 120 125

Gly Gly Gly Ser Gly Gly Ser Gly Ser Gly Gly Ser Gln
130 135 140

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145 150 155 160

Leu Ser Ile Thr Cys Thr Ile Ser Gly Phe Ser Leu Thr Lys Tyr Gly
165 170 175

Val His Trp Val Arg Gln Pro Pro Gly Lys Gly Leu Glu Trp Leu Val
180 185 190

Val Ile Trp Thr Asp Gly Gly Thr Ser Tyr Asn Ser Ala Leu Lys Ser
195 200 205

Arg Leu Ser Ile Ser Lys Asp Asn Ser Lys Ser Gln Val Phe Leu Lys
210 215 220

Met Asn Ser Leu Gln Thr Asp Asp Thr Ala Met Tyr Tyr Cys Ala Arg
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aca ggt gta cac tcc gat atc cag ctg acc cag tct caa aaa ttc atg 99
 Thr Gly Val His Ser Asp Ile Gln Leu Thr Gln Ser Gln Lys Phe Met
 15 20 25 30

tcc aca tca gta gga gac agg gtc agc gtc acc tgc aag gcc agt cag 147
 Ser Thr Ser Val Gly Asp Arg Val Ser Val Thr Cys Lys Ala Ser Gln
 35 40 45

aat gtg ggt act aat gta gcc tgg tat caa cag aaa cca ggg caa tct 195
 Asn Val Gly Thr Asn Val Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ser
 50 55 60

cct aaa gca ctg att tac tcg gca tcc tac cgg tac agt gga gtc cct 243
 Pro Lys Ala Leu Ile Tyr Ser Ala Ser Tyr Arg Tyr Ser Gly Val Pro
 65 70 75

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 Asp Arg Phe Thr Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile
 80 85 90

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Asn Ser Tyr Pro Leu Thr Phe Gly Ala Gly Thr Lys Leu Glu Ile Lys	
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Val Ile Trp Ser Gly Gly Ser Thr Asp Tyr Asn Ala Ala Phe Ile Ser	
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gtc tcc gaa ttc ccc aaa cct agc acc ccc cct ggc agc agt ggt gaa	819
Val Ser Glu Phe Pro Lys Pro Ser Thr Pro Pro Gly Ser Ser Gly Glu	
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275 280 285	
aaa ggc gaa ctc gag gaa ctg ctg aaa cat ctg aag gag ctg ctt aaa	915
Lys Gly Glu Leu Glu Leu Leu Lys His Leu Lys Glu Leu Leu Lys	
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ggt ggg agc gga ggc gcg gca cct act tca agt tct aca aag aaa	963
Gly Gly Ser Gly Gly Ala Pro Ala Pro Thr Ser Ser Thr Lys Lys	
305 310 315	
aca cag cta caa ctg gag cat tta ctg ctg gat tta cag atg att ttg	1011
Thr Gln Leu Gln Leu Glu His Leu Leu Leu Asp Leu Gln Met Ile Leu	
320 325 330	

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ttt aag ttt tac atg ccc aag aag gcc aca gaa ctg aaa cat ctt cag	355	360	365		1107
Phe Lys Phe Tyr Met Pro Lys Lys Ala Thr Glu Leu Lys His Leu Gln					
tgt cta gaa gaa gaa ctc aaa cct ctg gag gaa gtg cta aat tta gct	370	375	380		1155
Cys Leu Glu Glu Leu Lys Pro Leu Glu Glu Val Leu Asn Leu Ala					
caa agc aaa aac ttt cac tta aga ccc agg gac tta atc agc aat atc	385	390	395		1203
Gln Ser Lys Asn Phe His Leu Arg Pro Arg Asp Leu Ile Ser Asn Ile					
aac gta ata gtt ctg gaa cta aag gga tct gaa aca aca ttc atg tgt	400	405	410		1251
Asn Val Ile Val Leu Glu Leu Lys Gly Ser Glu Thr Thr Phe Met Cys					
gaa tat gct gat gag aca gca acc att gta gaa ttt ctg aac aga tgg	415	420	425	430	1299
Glu Tyr Ala Asp Glu Thr Ala Thr Ile Val Glu Phe Leu Asn Arg Trp					
att acc ttt tgt caa agc atc atc tca aca ctg act gac gtc cat cac	435	440	445		1347
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His His His His					

<210> 31
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Ser Val Gly Asp Arg Val Ser Val Thr Cys Lys Ala Ser Gln Asn Val	35	40	45		
Gly Thr Asn Val Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ser Pro Lys	50	55	60		
Ala Leu Ile Tyr Ser Ala Ser Tyr Arg Tyr Ser Gly Val Pro Asp Arg	65	70	75	80	
Phe Thr Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Asn	85	90	95		
Val Gln Ser Glu Asp Leu Ala Glu Tyr Phe Cys Gln Gln Tyr Asn Ser	100	105	110		

Tyr Pro Leu Thr Phe Gly Ala Gly Thr Lys Leu Glu Ile Lys Gly Gly
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145 150 155 160

Ile Thr Cys Thr Val Ser Gly Phe Ser Leu Thr Ser Tyr Gly Val His
165 170 175

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Ser Leu Gln Ala Asn Asp Thr Ala Ile Tyr Tyr Cys Ala Arg Met Glu
225 230 235 240

Asn Trp Ser Phe Ala Tyr Trp Gly Gln Gly Thr Thr Val Thr Val Ser
245 250 255

Glu Phe Pro Lys Pro Ser Thr Pro Pro Gly Ser Ser Gly Glu Leu Glu
260 265 270

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275 280 285

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290 295 300

Ser Gly Gly Ala Pro Ala Pro Thr Ser Ser Ser Thr Lys Lys Thr Gln
305 310 315 320

Leu Gln Leu Glu His Leu Leu Leu Asp Leu Gln Met Ile Leu Asn Gly
325 330 335

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355 360 365

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370 375 380

Lys Asn Phe His Leu Arg Pro Arg Asp Leu Ile Ser Asn Ile Asn Val
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Thr Gly Val His Ser Asp Ile Gln Leu Thr Gln Ser Gln Lys Phe Met
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Ser Thr Ser Val Gly Asp Arg Val Ser Val Thr Cys Lys Ala Ser Gln
35 40 45

aat gtg ggt act aat gta gcc tgg tat caa cag aaa cca ggg caa tct 195
Asn Val Gly Thr Asn Val Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ser
50 55 60

cct aaa gca ctg att tac tcg gca tcc tac cgg tac agt gga gtc cct 243
Pro Lys Ala Leu Ile Tyr Ser Ala Ser Tyr Arg Tyr Ser Gly Val Pro
65 70 75

gat cgc ttc aca ggc agt gga tct ggg aca gat ttc act ctc acc atc 291
Asp Arg Phe Thr Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile
80 85 90

agc aat gtg cag tct gaa gac ttg gca gag tat ttc tgt cag caa tat 339
Ser Asn Val Gln Ser Glu Asp Leu Ala Glu Tyr Phe Cys Gln Gln Tyr
95 100 105 110

aac agc tat ccg ctc acg ttc ggt gct ggg acc aag ctc gag atc aaa 387
Asn Ser Tyr Pro Leu Thr Phe Gly Ala Gly Thr Lys Leu Glu Ile Lys
115 120 125

ggt ggt ggt tct ggc ggc ggc tcc ggt ggt ggt tct cag 435
Gly Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gln
130 135 140

gtg aaa ctg cag gag tca gga cct ggc cta gtg cag ccc tca cag agc 483
Val Lys Leu Gln Glu Ser Gly Pro Gly Leu Val Gln Pro Ser Gln Ser
145 150 155

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gta cac tgg gtt cgc cag tct cca gga aag ggt ctg gag tgg ctg gga		579
Val His Trp Val Arg Gin Ser Pro Gly Lys Gly Leu Glu Trp Leu Gly		
175	180	185
190		
gtg ata tgg agt ggt gga agc aca gac tat aat gca gct ttc ata tcc		627
Val Ile Trp Ser Gly Gly Ser Thr Asp Tyr Asn Ala Ala Phe Ile Ser		
195	200	205
aga ctg agc atc agc aag gac aat tcc aag agc caa gtt ttc ttt aaa		675
Arg Leu Ser Ile Ser Lys Asp Asn Ser Lys Ser Gln Val Phe Phe Lys		
210	215	220
atg aac agt ctg caa gct aat gac aca gcc ata tat tac tgt gcc aga		723
Met Asn Ser Leu Gln Ala Asn Asp Thr Ala Ile Tyr Tyr Cys Ala Arg		
225	230	235
atg gag aac tgg tcg ttt gct tac tgg ggc caa ggg acc acg gtc acc		771
Met Glu Asn Trp Ser Phe Ala Tyr Trp Gly Gln Gly Thr Thr Val Thr		
240	245	250
gtc tcc gaa ttc acc ccg ctg ggt gac acc acc cac acc tcc gga aaa		819
Val Ser Glu Phe Thr Pro Leu Gly Asp Thr Thr His Thr Ser Gly Lys		
255	260	265
270		
cca ctg gat gga gaa tat ttc acc ctt cag atc cgt ggg cgt gag cgc		867
Pro Leu Asp Gly Glu Tyr Phe Thr Leu Gln Ile Arg Gly Arg Glu Arg		
275	280	285
ttc gag atg ttc cga gag ctg aat gag gcc ttg gaa ctc aag gat gcc		915
Phe Glu Met Phe Arg Glu Leu Asn Glu Ala Leu Glu Leu Lys Asp Ala		
290	295	300
cag gct ggg aag gag cca ggg ggg agc gga ggc gcg ccg gca cct act		963
Gln Ala Gly Lys Glu Pro Gly Gly Ser Gly Gly Ala Pro Ala Pro Thr		
305	310	315
tca agt tct aca aag aaa aca cag cta caa ctg gag cat tta ctg ctg		1011
Ser Ser Ser Thr Lys Lys Thr Gln Leu Gln Leu Glu His Leu Leu Leu		
320	325	330
gat tta cag atg att ttg aat gga att aat aat tac aag aat ccc aaa		1059
Asp Leu Gln Met Ile Leu Asn Gly Ile Asn Asn Tyr Lys Asn Pro Lys		
335	340	345
350		
ctc acc agg atg ctc aca ttt aag ttt tac atg ccc aag aag gcc aca		1107
Leu Thr Arg Met Leu Thr Phe Lys Phe Tyr Met Pro Lys Lys Ala Thr		
355	360	365
gaa ctg aaa cat ctt cag tgt cta gaa gaa ctc aaa cct ctg gag		1155
Glu Leu Lys His Leu Gln Cys Leu Glu Glu Leu Lys Pro Leu Glu		
370	375	380
gaa gtg cta aat tta gct caa agc aaa aac ttt cac tta aga ccc agg		1203
Glu Val Leu Asn Leu Ala Gln Ser Lys Asn Phe His Leu Arg Pro Arg		
385	390	395

gac tta atc agc aat atc aac gta ata gtt ctg gaa cta aag gga tct 1251
Asp Leu Ile Ser Asn Ile Asn Val Ile Val Leu Glu Leu Lys Gly Ser
400 405 410

gaa aca aca ttc atg tgt gaa tat gct gat gag aca gca acc att gta 1299
Glu Thr Thr Phe Met Cys Glu Tyr Ala Asp Glu Thr Ala Thr Ile Val
415 420 425 430

gaa ttt ctg aac aga tgg att acc ttt tgt caa agc atc atc tca aca 1347
Glu Phe Leu Asn Arg Trp Ile Thr Phe Cys Gln Ser Ile Ile Ser Thr
435 440 445

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Leu Thr Asp Val His His His His His His
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Ser Val Gly Asp Arg Val Ser Val Thr Cys Lys Ala Ser Gln Asn Val
35 40 45

Gly Thr Asn Val Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ser Pro Lys
50 55 60

Ala Leu Ile Tyr Ser Ala Ser Tyr Arg Tyr Ser Gly Val Pro Asp Arg
65 70 75 80

Phe Thr Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Asn
85 90 95

Val Gln Ser Glu Asp Leu Ala Glu Tyr Phe Cys Gln Gln Tyr Asn Ser
100 105 110

Tyr Pro Leu Thr Phe Gly Ala Gly Thr Lys Leu Glu Ile Lys Gly Gly
115 120 125

Gly Gly Ser Gly Gly Ser Gly Gly Gly Ser Gln Val Lys
130 135 140

Leu Gln Glu Ser Gly Pro Gly Leu Val Gln Pro Ser Gln Ser Leu Ser
145 150 155 160

Ile Thr Cys Thr Val Ser Gly Phe Ser Leu Thr Ser Tyr Gly Val His
165 170 175

Trp Val Arg Gln Ser Pro Gly Lys Gly Leu Glu Trp Leu Gly Val Ile
180 185 190

Trp Ser Gly Gly Ser Thr Asp Tyr Asn Ala Ala Phe Ile Ser Arg Leu
195 200 205

Ser Ile Ser Lys Asp Asn Ser Lys Ser Gln Val Phe Phe Lys Met Asn
210 215 220

Ser Leu Gln Ala Asn Asp Thr Ala Ile Tyr Tyr Cys Ala Arg Met Glu
225 230 235 240

Asn Trp Ser Phe Ala Tyr Trp Gly Gln Gly Thr Thr Val Thr Val Ser
245 250 255

Glu Phe Thr Pro Leu Gly Asp Thr Thr His Thr Ser Gly Lys Pro Leu
260 265 270

Asp Gly Glu Tyr Phe Thr Leu Gln Ile Arg Gly Arg Glu Arg Phe Glu
275 280 285

Met Phe Arg Glu Leu Asn Glu Ala Leu Glu Leu Lys Asp Ala Gln Ala
290 295 300

Gly Lys Glu Pro Gly Gly Ser Gly Gly Ala Pro Ala Pro Thr Ser Ser
305 310 315 320

Ser Thr Lys Lys Thr Gln Leu Gln Leu Glu His Leu Leu Leu Asp Leu
325 330 335

Gln Met Ile Leu Asn Gly Ile Asn Asn Tyr Lys Asn Pro Lys Leu Thr
340 345 350

Arg Met Leu Thr Phe Lys Phe Tyr Met Pro Lys Lys Ala Thr Glu Leu
355 360 365

Lys His Leu Gln Cys Leu Glu Glu Leu Lys Pro Leu Glu Glu Val
370 375 380

Leu Asn Leu Ala Gln Ser Lys Asn Phe His Leu Arg Pro Arg Asp Leu
385 390 395 400

Ile Ser Asn Ile Asn Val Ile Val Leu Glu Leu Lys Gly Ser Glu Thr
405 410 415

Thr Phe Met Cys Glu Tyr Ala Asp Glu Thr Ala Thr Ile Val Glu Phe
420 425 430

Leu Asn Arg Trp Ile Thr Phe Cys Gln Ser Ile Ile Ser Thr Leu Thr
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Asp Val His His His His His
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aca ggt gta cac tcc gat atc cag ctg acc cag tct cca gca atc atg 99
Thr Gly Val His Ser Asp Ile Gln Leu Thr Gln Ser Pro Ala Ile Met
15 20 25 30

tct gca tct cca ggg gaa aag gtc acc atg acc tgc agg gcc agc tca 147
Ser Ala Ser Pro Gly Glu Lys Val Thr Met Thr Cys Arg Ala Ser Ser
35 40 45

agt gtt agt tcc agt tac ttg cac tgg tac cag cag aag tca ggt gcc 195
Ser Val Ser Ser Tyr Leu His Trp Tyr Gln Gln Lys Ser Gly Ala
50 55 60

tcc ccc aaa ctc tgg att tat agc aca tcc aac ttg gct tct gga gtc 243
Ser Pro Lys Leu Trp Ile Tyr Ser Thr Ser Asn Leu Ala Ser Gly Val
65 70 75

cct gct cgc ttc agt ggc agt ggg tct ggg acc tct tac tct ctc aca 291
Pro Ala Arg Phe Ser Gly Ser Gly Thr Ser Tyr Ser Leu Thr
80 85 90

atc agc agt gtg gag gct gaa gat gct gcc act tat tac tgc cag cag 339
Ile Ser Ser Val Glu Ala Asp Ala Ala Thr Tyr Tyr Cys Gln Gln
95 100 105 110

tac agt ggt tac ccg tac acg ttc gga ggg ggg acc aag ctc gag atc 387
Tyr Ser Gly Tyr Pro Tyr Thr Phe Gly Gly Thr Lys Leu Glu Ile
115 120 125

aaa ggt ggt ggt tct ggc ggc ggc tcc ggt ggt ggt ggt tct 435
Lys Gly Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser
130 135 140

cag gtg aaa ctg cag gag tct ggg gct gag ctt gtg aag cct ggg gct 483
Gln Val Lys Leu Gln Glu Ser Gly Ala Glu Leu Val Lys Pro Gly Ala
145 150 155

tca gtg aag ctg tcc tgc aag gct tct ggc tac acc ctc acc agc tac 531
Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Tyr Thr Leu Thr Ser Tyr
160 165 170

tgg ttg cac tgg gtg aag cag tgg cct gga cga ggc ctt gag tgg att 579
Trp Leu His Trp Val Lys Gln Trp Pro Gly Arg Gly Leu Glu Trp Ile
175 180 185 190

gga agg att gat ccc aat agt ggt ggt act aag tac gat gag aag ttc 627

Gly Arg Ile Asp Pro Asn Ser Gly	Gly Thr Lys Tyr Asp Glu Lys Phe		
195	200	205	
aag agc aag gcc aca ctg act gta gac aaa ccc tcc agc aca gcc tac	Lys Ser Lys Ala Thr Leu Thr Val Asp Lys Pro Ser Ser Thr Ala Tyr	675	
210	215	220	
atg cag ctc agc agc ctg aca tct gag gac tct gcg gtc tat tat tgt	Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Cys	723	
225	230	235	
gca aga tgg gac tac tgg ggc caa ggg acc acg gtc acc gtc tcc tcc	Ala Arg Trp Asp Tyr Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser	771	
240	245	250	
gga acc ccg ctg ggt gac acc acc cac act agt gga aaa cca ctg gat	Gly Thr Pro Leu Gly Asp Thr Thr His Thr Ser Gly Lys Pro Leu Asp	819	
255	260	265	270
gga gaa tat ttc acc ctt cag atc cgt ggg cgt gag cgc ttc gag atg	Gly Glu Tyr Phe Thr Leu Gln Ile Arg Gly Arg Glu Arg Phe Glu Met	867	
275	280	285	
ttc cga gag ctg aat gag gcc ttg gaa ctc aag gat gcc cag gct ggg	Phe Arg Glu Leu Asn Glu Ala Leu Glu Leu Lys Asp Ala Gln Ala Gly	915	
290	295	300	
aag gag cca ggg ggg tcc gga ggt ggt ggt agc acc caa gtg tgc acc	Lys Glu Pro Gly Gly Ser Gly Gly Ser Thr Gln Val Cys Thr	963	
305	310	315	
ggc aca gac atg aag ctg cgg ctc cct gcc agt ccc gag acc cac ctg	Gly Thr Asp Met Lys Leu Arg Leu Pro Ala Ser Pro Glu Thr His Leu	1011	
320	325	330	
gac atg ctc cgc cac ctc tac cag ggc tgc cag gtg gtg cag gga aac	Asp Met Leu Arg His Leu Tyr Gln Gly Cys Gln Val Val Gln Gly Asn	1059	
335	340	345	350
ctg gaa ctc acc tac ctg ccc acc aat gcc agc ctg tcc ttc ctg cag	Leu Glu Leu Thr Tyr Leu Pro Thr Asn Ala Ser Leu Ser Phe Leu Gln	1107	
355	360	365	
gat atc cag gag gtg cag ggc tac gtg ctc atc gct cac aac caa gtg	Asp Ile Gln Glu Val Gln Gly Tyr Val Leu Ile Ala His Asn Gln Val	1155	
370	375	380	
agg cag gtc cca ctg cag agg ctg cgg att gtg cga ggc acc cag ctc	Arg Gln Val Pro Leu Gln Arg Leu Arg Ile Val Arg Gly Thr Gln Leu	1203	
385	390	395	
ttt gag gac aac tat gcc ctg gcc gtg cta gac aat gga gac ccg ctg	Phe Glu Asp Asn Tyr Ala Leu Ala Val Leu Asp Asn Gly Asp Pro Leu	1251	
400	405	410	
aac aat acc acc cct gtc aca ggg gcc tcc cca gga ggc ctg cgg gag	Asn Asn Thr Thr Pro Val Thr Gly Ala Ser Pro Gly Gly Leu Arg Glu	1299	
415	420	425	430

ctg cag ctt cga agc ctc aca gag atc ttg aaa gga ggg gtc ttg atc 1347
 Leu Gln Leu Arg Ser Leu Thr Glu Ile Leu Lys Gly Gly Val Leu Ile
 435 440 445

cag cgg aac ccc cag ctc tgc tac cag gac acg att ttg tgg aag gac 1395
 Gln Arg Asn Pro Gln Leu Cys Tyr Gln Asp Thr Ile Leu Trp Lys Asp
 450 455 460

atc ttc cac aag aac aac cag ctg gct ctc aca ctg ata gac acc aac 1443
 Ile Phe His Lys Asn Asn Gln Leu Ala Leu Thr Leu Ile Asp Thr Asn
 465 470 475

cgc tct cgg gcc tgc cac ccc tgt tct ccg atg tgt aag ggc tcc cgc 1491
 Arg Ser Arg Ala Cys His Pro Cys Ser Pro Met Cys Lys Gly Ser Arg
 480 485 490

tgc tgg gga gag agt tct gag gat tgt cag agc ctg acg cgc act gtc 1539
 Cys Trp Gly Glu Ser Ser Glu Asp Cys Gln Ser Leu Thr Arg Thr Val
 495 500 505 510

tgt gcc ggt ggc tgt gcc cgc tgc aag ggg cca ctg ccc act gac tgc 1587
 Cys Ala Gly Gly Cys Ala Arg Cys Lys Gly Pro Leu Pro Thr Asp Cys
 515 520 525

tgc cat gag cag tgt gct gcc ggc tgc acg ggc ccc aag cac tct gac 1635
 Cys His Glu Gln Cys Ala Ala Gly Cys Thr Gly Pro Lys His Ser Asp
 530 535 540

tgc ctg gcc tgc ctc cac ttc aac cac agt ggc atc tgt gag ctg cac 1683
 Cys Leu Ala Cys Leu His Phe Asn His Ser Gly Ile Cys Glu Leu His
 545 550 555

tgc cca gcc ctg gtc acc tac aac aca gac acg ttt gag tcc atg ccc 1731
 Cys Pro Ala Leu Val Thr Tyr Asn Thr Asp Thr Phe Glu Ser Met Pro
 560 565 570

aat ccc gag ggc cgg tat aca ttc ggc gcc agc tgt gtg act gcc tgt 1779
 Asn Pro Glu Gly Arg Tyr Thr Phe Gly Ala Ser Cys Val Thr Ala Cys
 575 580 585 590

ccc tac aac tac ctt tct acg gac gtg gga tcc tgc acc ctc gtc tgc 1827
 Pro Tyr Asn Tyr Leu Ser Thr Asp Val Gly Ser Cys Thr Leu Val Cys
 595 600 605

ccc ctg cac aac caa gag gtg aca gca gag gat gga aca cag cgg tgt 1875
 Pro Leu His Asn Gln Glu Val Thr Ala Glu Asp Gly Thr Gln Arg Cys
 610 615 620

gag aag tgc agc aag ccc tgt gcc cga gtg tgc tat ggt ctg ggc atg 1923
 Glu Lys Cys Ser Lys Pro Cys Ala Arg Val Cys Tyr Gly Leu Gly Met
 625 630 635

gag cac ttg cga gag gtg agg gca gtt acc agt gcc aat atc cag gag 1971
 Glu His Leu Arg Glu Val Arg Ala Val Thr Ser Ala Asn Ile Gln Glu
 640 645 650

ttt gct ggc tgc aag aag atc ttt ggg agc ctg gca ttt ctg ccg gag 2019
 Phe Ala Gly Cys Lys Lys Ile Phe Gly Ser Leu Ala Phe Leu Pro Glu
 655 660 665 670

agc ttt gat ggg gac cca gcc tcc aac act gcc ccg ctc cag cca gag	2067		
Ser Phe Asp Gly Asp Pro Ala Ser Asn Thr Ala Pro Leu Gln Pro Glu			
675	680	685	
cag ctc caa gtg ttt gag act ctg gaa gag atc aca ggt tac cta tac	2115		
Gln Leu Gln Val Phe Glu Thr Leu Glu Ile Thr Gly Tyr Leu Tyr			
690	695	700	
atc tca gca tgg ccg gac agc ctg cct gac ctc agc gtc ttc cag aac	2163		
Ile Ser Ala Trp Pro Asp Ser Leu Pro Asp Leu Ser Val Phe Gln Asn			
705	710	715	
ctg caa gta atc cgg gga cga att ctg cac aat ggc gcc tac tcg ctg	2211		
Leu Gln Val Ile Arg Gly Arg Ile Leu His Asn Gly Ala Tyr Ser Leu			
720	725	730	
acc ctg caa ggg ctg ggc atc agc tgg ctg ggg ctg cgc tca ctg agg	2259		
Thr Leu Gln Gly Leu Gly Ile Ser Trp Leu Gly Leu Arg Ser Leu Arg			
735	740	745	750
gaa ctg ggc agt gga ctg gcc ctc atc cac cat aac acc cac ctc tgc	2307		
Glu Leu Gly Ser Gly Leu Ala Leu Ile His His Asn Thr His Leu Cys			
755	760	765	
ttc gtg cac acg gtg ccc tgg gac cag ctc ttt cgg aac ccg cac caa	2355		
Phe Val His Thr Val Pro Trp Asp Gln Leu Phe Arg Asn Pro His Gln			
770	775	780	
gct ctg ctc cac act gcc aac cgg cca gag gac gag tgt gtg ggc gag	2403		
Ala Leu Leu His Thr Ala Asn Arg Pro Glu Asp Glu Cys Val Gly Glu			
785	790	795	
ggc ctg gcc tgc cac cag ctg tgc gcc cga ggg cac tgc tgg ggt cca	2451		
Gly Leu Ala Cys His Gln Leu Cys Ala Arg Gly His Cys Trp Gly Pro			
800	805	810	
ggg ccc acc cag tgt gtc aac tgc agc cag ttc ctt cgg ggc cag gag	2499		
Gly Pro Thr Gln Cys Val Asn Cys Ser Gln Phe Leu Arg Gly Gln Glu			
815	820	825	830
tgc gtg gag gaa tgc cga gta ctg cag ggg ctc ccc agg gag tat gtg	2547		
Cys Val Glu Glu Cys Arg Val Leu Gln Gly Leu Pro Arg Glu Tyr Val			
835	840	845	
aat gcc agg cac tgt ttg ccg tgc cac cct gag tgt cag ccc cag aat	2595		
Asn Ala Arg His Cys Leu Pro Cys His Pro Glu Cys Gln Pro Gln Asn			
850	855	860	
ggc tca gtg acc tgt ttt gga ccg gag gct gac cag tgt gtg gcc tgt	2643		
Gly Ser Val Thr Cys Phe Gly Pro Glu Ala Asp Gln Cys Val Ala Cys			
865	870	875	
gcc cac tat aag gac cct ccc ttc tgc gtg gcc cgc tgc ccc agc ggt	2691		
Ala His Tyr Lys Asp Pro Pro Phe Cys Val Ala Arg Cys Pro Ser Gly			
880	885	890	
gtg aaa cct gac ctc tcc tac atg ccc atc tgg aag ttt cca gat gag	2739		
Val Lys Pro Asp Leu Ser Tyr Met Pro Ile Trp Lys Phe Pro Asp Glu			
895	900	905	910

gag ggc gca tgc cag cct tgc ccc atc aac tgc acc cac tcc tgt gtg 2787
Glu Gly Ala Cys Gln Pro Cys Pro Ile Asn Cys Thr His Ser Cys Val
915 920 925

gac ctg gat gac aag ggc tgc ccc gcc gag cag aga gcc agc cct ctg 2835
Asp Leu Asp Asp Lys Gly Cys Pro Ala Glu Gln Arg Ala Ser Pro Leu
930 935 940

acg tcc ggg cat cat cac cat cat tgagtcgac 2871
Thr Ser Gly His His His His His His
945 950

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20 25 30

Ser Pro Gly Glu Lys Val Thr Met Thr Cys Arg Ala Ser Ser Ser Val
35 40 45

Ser Ser Ser Tyr Leu His Trp Tyr Gln Gln Lys Ser Gly Ala Ser Pro
50 55 60

Lys Leu Trp Ile Tyr Ser Thr Ser Asn Leu Ala Ser Gly Val Pro Ala
65 70 75 80

Arg Phe Ser Gly Ser Gly Thr Ser Tyr Ser Leu Thr Ile Ser
85 90 95

Ser Val Glu Ala Glu Asp Ala Ala Thr Tyr Tyr Cys Gln Gln Tyr Ser
100 105 110

Gly Tyr Pro Tyr Thr Phe Gly Gly Thr Lys Leu Glu Ile Lys Gly
115 120 125

Gly Gly Gly Ser Gly Gly Ser Gly Gly Ser Gln Val
130 135 140

Lys Leu Gln Glu Ser Gly Ala Glu Leu Val Lys Pro Gly Ala Ser Val
145 150 155 160

Lys Leu Ser Cys Lys Ala Ser Gly Tyr Thr Leu Thr Ser Tyr Trp Leu
165 170 175

His Trp Val Lys Gln Trp Pro Gly Arg Gly Leu Glu Trp Ile Gly Arg
180 185 190

Ile Asp Pro Asn Ser Gly Gly Thr Lys Tyr Asp Glu Lys Phe Lys Ser
195 200 205

Lys Ala Thr Leu Thr Val Asp Lys Pro Ser Ser Thr Ala Tyr Met Gln
210 215 220

Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Cys Ala Arg
225 230 235 240

Trp Asp Tyr Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Thr
245 250 255

Pro Leu Gly Asp Thr Thr His Thr Ser Gly Lys Pro Leu Asp Gly Glu
260 265 270

Tyr Phe Thr Leu Gln Ile Arg Gly Arg Glu Arg Phe Glu Met Phe Arg
275 280 285

Glu Leu Asn Glu Ala Leu Glu Leu Lys Asp Ala Gln Ala Gly Lys Glu
290 295 300

Pro Gly Gly Ser Gly Gly Gly Ser Thr Gln Val Cys Thr Gly Thr
305 310 315 320

Asp Met Lys Leu Arg Leu Pro Ala Ser Pro Glu Thr His Leu Asp Met
325 330 335

Leu Arg His Leu Tyr Gln Gly Cys Gln Val Val Gln Gly Asn Leu Glu
340 345 350

Leu Thr Tyr Leu Pro Thr Asn Ala Ser Leu Ser Phe Leu Gln Asp Ile
355 360 365

Gln Glu Val Gln Gly Tyr Val Leu Ile Ala His Asn Gln Val Arg Gln
370 375 380

Val Pro Leu Gln Arg Leu Arg Ile Val Arg Gly Thr Gln Leu Phe Glu
385 390 395 400

Asp Asn Tyr Ala Leu Ala Val Leu Asp Asn Gly Asp Pro Leu Asn Asn
405 410 415

Thr Thr Pro Val Thr Gly Ala Ser Pro Gly Gly Leu Arg Glu Leu Gln
420 425 430

Leu Arg Ser Leu Thr Glu Ile Leu Lys Gly Gly Val Leu Ile Gln Arg
435 440 445

Asn Pro Gln Leu Cys Tyr Gln Asp Thr Ile Leu Trp Lys Asp Ile Phe
450 455 460

His Lys Asn Asn Gln Leu Ala Leu Thr Leu Ile Asp Thr Asn Arg Ser
465 470 475 480

Arg Ala Cys His Pro Cys Ser Pro Met Cys Lys Gly Ser Arg Cys Trp
485 490 495

Gly Glu Ser Ser Glu Asp Cys Gln Ser Leu Thr Arg Thr Val Cys Ala
500 505 510

Gly Gly Cys Ala Arg Cys Lys Gly Pro Leu Pro Thr Asp Cys Cys His
515 520 525

Glu Gln Cys Ala Ala Gly Cys Thr Gly Pro Lys His Ser Asp Cys Leu
530 535 540

Ala Cys Leu His Phe Asn His Ser Gly Ile Cys Glu Leu His Cys Pro
545 550 555 560

Ala Leu Val Thr Tyr Asn Thr Asp Thr Phe Glu Ser Met Pro Asn Pro
565 570 575

Glu Gly Arg Tyr Thr Phe Gly Ala Ser Cys Val Thr Ala Cys Pro Tyr
580 585 590

Asn Tyr Leu Ser Thr Asp Val Gly Ser Cys Thr Leu Val Cys Pro Leu
595 600 605

His Asn Gln Glu Val Thr Ala Glu Asp Gly Thr Gln Arg Cys Glu Lys
610 615 620

Cys Ser Lys Pro Cys Ala Arg Val Cys Tyr Gly Leu Gly Met Glu His
625 630 635 640

Leu Arg Glu Val Arg Ala Val Thr Ser Ala Asn Ile Gln Glu Phe Ala
645 650 655

Gly Cys Lys Lys Ile Phe Gly Ser Leu Ala Phe Leu Pro Glu Ser Phe
660 665 670

Asp Gly Asp Pro Ala Ser Asn Thr Ala Pro Leu Gln Pro Glu Gln Leu
675 680 685

Gln Val Phe Glu Thr Leu Glu Ile Thr Gly Tyr Leu Tyr Ile Ser
690 695 700

Ala Trp Pro Asp Ser Leu Pro Asp Leu Ser Val Phe Gln Asn Leu Gln
705 710 715 720

Val Ile Arg Gly Arg Ile Leu His Asn Gly Ala Tyr Ser Leu Thr Leu
725 730 735

Gln Gly Leu Gly Ile Ser Trp Leu Gly Leu Arg Ser Leu Arg Glu Leu
740 745 750

Gly Ser Gly Leu Ala Leu Ile His His Asn Thr His Leu Cys Phe Val
755 760 765

His Thr Val Pro Trp Asp Gln Leu Phe Arg Asn Pro His Gln Ala Leu
770 775 780

Leu His Thr Ala Asn Arg Pro Glu Asp Glu Cys Val Gly Glu Gly Leu
785 790 795 800

Ala Cys His Gln Leu Cys Ala Arg Gly His Cys Trp Gly Pro Gly Pro
805 810 815

Thr Gln Cys Val Asn Cys Ser Gln Phe Leu Arg Gly Gln Glu Cys Val
820 825 830

Glu Glu Cys Arg Val Leu Gln Gly Leu Pro Arg Glu Tyr Val Asn Ala
835 840 845

Arg His Cys Leu Pro Cys His Pro Glu Cys Gln Pro Gln Asn Gly Ser
850 855 860

Val Thr Cys Phe Gly Pro Glu Ala Asp Gln Cys Val Ala Cys Ala His
865 870 875 880

Tyr Lys Asp Pro Pro Phe Cys Val Ala Arg Cys Pro Ser Gly Val Lys
885 890 895

Pro Asp Leu Ser Tyr Met Pro Ile Trp Lys Phe Pro Asp Glu Glu Gly
900 905 910

Ala Cys Gln Pro Cys Pro Ile Asn Cys Thr His Ser Cys Val Asp Leu
915 920 925

Asp Asp Lys Gly Cys Pro Ala Glu Gln Arg Ala Ser Pro Leu Thr Ser
930 935 940

Gly His His His His His
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<222> (39)...(1607)

<400> 36

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Ile Leu Phe Leu Val Ala Thr Ala Thr Gly Val His Ser Glu Leu Gln
10 15 20

atg acc cag tct cca tcc tcc ctg tct gca tct gta gga gac aga gtc 152
Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val
25 30 35

acc atc act tgc cgg gca agt cag agc att agc agc tat tta aat tgg 200
Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Ser Ser Tyr Leu Asn Trp
40 45 50

tat cag cag aaa cca gga cag cct cct aag ctg ctc att tac tgg gca 248
Tyr Gln Gln Lys Pro Gly Gln Pro Pro Lys Leu Leu Ile Tyr Trp Ala
55 60 65 70

tct acc cgg gaa tcc ggg gtc cct gac cga ttc agc ggc agt gaa tct 296
Ser Thr Arg Glu Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Glu Ser
75 80 85

ggg aca aat tac act ctc acc atc agc agc ctg cag cct gaa gat ttt 344
Gly Thr Asn Tyr Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe
90 95 100

gct act tac ttt tgt caa cag tct gac agt ttg ccg atc acc ttc ggc	392
Ala Thr Tyr Phe Cys Gln Gln Ser Asp Ser Leu Pro Ile Thr Phe Gly	
105 110 115	
caa ggg aca cga ctg gac att caa gga gga gga tca ggt ggt ggt	440
Gln Gly Thr Arg Leu Asp Ile Gln Gly Gly Gly Ser Gly Gly Gly	
120 125 130	
ggt agc ggc ggc ggc tca gag gtg cag ctg ctc gag tct ggg gga	488
Gly Ser Gly Gly Ser Glu Val Gln Leu Leu Glu Ser Gly Gly	
135 140 145 150	
ggc gtg gtc cag cct ggg agg tcc ctg aga ctc tcc tgt gca gcc tct	536
Gly Val Val Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser	
155 160 165	
gga ttc acc ttc agt agc tat ggc atg cac tgg gtc cgc cag gct cca	584
Gly Phe Thr Phe Ser Ser Tyr Gly Met His Trp Val Arg Gln Ala Pro	
170 175 180	
ggc aag ggg ctg gag tgg gtg gca gtt ata tca tat gat gga agt aat	632
Gly Lys Gly Leu Glu Trp Val Ala Val Ile Ser Tyr Asp Gly Ser Asn	
185 190 195	
aaa tac tat gca gac tcc gtg aag ggc cga ttc acc atc tcc aga gac	680
Lys Tyr Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp	
200 205 210	
aat tcc aag aac acg ctg tat ctg caa atg aac agc ctg aga gct gag	728
Asn Ser Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu	
215 220 225 230	
gac acg gct gtg tat tac tgt gcg aaa gat atg ggg tgg ggc agt ggc	776
Asp Thr Ala Val Tyr Tyr Cys Ala Lys Asp Met Gly Trp Gly Ser Gly	
235 240 245	
tgg aga ccc tac tac tac tac ggt atg gac gtc tgg ggc caa ggg acc	824
Trp Arg Pro Tyr Tyr Tyr Gly Met Asp Val Trp Gly Gln Gly Thr	
250 255 260	
acg gtc acc gtc tcc tcc gga acc ccg ctg ggt gac acc acc cac acc	872
Thr Val Thr Val Ser Ser Gly Thr Pro Leu Gly Asp Thr Thr His Thr	
265 270 275	
gct agc acc aag ggc cca tcg gtc ttc ccc ctg gca ccc tcc tcc aag	920
Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Ser Ser Lys	
280 285 290	
agc acc tct ggg ggc aca gcg gcc ctg ggc tgc ctg gtc aag gac tac	968
Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr	
295 300 305 310	
ttc ccc gaa ccg gtg acg gtg tcg tgg aac tca ggc gcc ctg acc agc	1016
Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser	
315 320 325	
ggc gtg cac acc ttc ccg gct gtc cta cag tcc tca gga ctc tac tcc	1064
Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser	
330 335 340	

ctc agc agc gtg gtg acc gtg ccc tcc agc agc ttg ggc acc cag acc		1112
Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Gln Thr		
345	350	355
tac atc tgc aac gtg aat cac aag ccc agc aac acc aag gtg gac aag		1160
Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys Val Asp Lys		
360	365	370
aaa gtt gag ccc aaa tct tgt gac aaa act agt gga ggc ggt ggg tcc		1208
Lys Val Glu Pro Lys Ser Cys Asp Lys Thr Ser Gly Gly Gly Ser		
375	380	385
gca ccc gcc cgc tcg ccc agc ccc agc acg cag ccc tgg gag cat gtg		1256
Ala Pro Ala Arg Ser Pro Ser Pro Ser Thr Gln Pro Trp Glu His Val		
395	400	405
aat gcc atc cag gag gcc cgg cgt ctc ctg aac ctg agt aga gac act		1304
Asn Ala Ile Gln Glu Ala Arg Arg Leu Leu Asn Leu Ser Arg Asp Thr		
410	415	420
gct gct gag atg aat gaa aca gta gaa gtc atc tca gaa atg ttt gac		1352
Ala Ala Glu Met Asn Glu Thr Val Glu Val Ile Ser Glu Met Phe Asp		
425	430	435
ctc cag gag ccg acc tgc cta cag acc cgc ctg gag ctg tac aag cag		1400
Leu Gln Glu Pro Thr Cys Leu Gln Thr Arg Leu Glu Leu Tyr Lys Gln		
440	445	450
ggc ctg cgg ggc agc ctc acc aag ctc aag ggc ccc ttg acc atg atg		1448
Gly Leu Arg Gly Ser Leu Thr Lys Leu Lys Gly Pro Leu Thr Met Met		
455	460	465
gcc agc cac tac aag cag cac tgc cct cca acc ccg gaa act tcc tgt		1496
Ala Ser His Tyr Lys Gln His Cys Pro Pro Thr Pro Glu Thr Ser Cys		
475	480	485
gca acc cag att atc acc ttt gaa agt ttc aaa gag aac ctg aag gac		1544
Ala Thr Gln Ile Ile Thr Phe Glu Ser Phe Lys Glu Asn Leu Lys Asp		
490	495	500
ttt ctg ctt gtc atc ccc ttt gac tgc tgg gag cca gtc cag gag cat		1592
Phe Leu Leu Val Ile Pro Phe Asp Cys Trp Glu Pro Val Gln Glu His		
505	510	515
cat cac cat cat cat tgagtgcact taaaacagct ctg		1630
His His His His		
520		

<210> 37
 <211> 523
 <212> PRT
 <213> Homo sapiens/Mus musculus

<400> 37
 Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly
 1 5 10 15

Val His Ser Glu Leu Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala
20 25 30

Ser Val Gly Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile
35 40 45

Ser Ser Tyr Leu Asn Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro Lys
50 55 60

Leu Leu Ile Tyr Trp Ala Ser Thr Arg Glu Ser Gly Val Pro Asp Arg
65 70 75 80

Phe Ser Gly Ser Glu Ser Gly Thr Asn Tyr Thr Leu Thr Ile Ser Ser
85 90 95

Leu Gln Pro Glu Asp Phe Ala Thr Tyr Phe Cys Gln Gln Ser Asp Ser
100 105 110

Leu Pro Ile Thr Phe Gly Gln Gly Thr Arg Leu Asp Ile Gln Gly Gly
115 120 125

Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly Ser Glu Val Gln
130 135 140

Leu Leu Glu Ser Gly Gly Val Val Gln Pro Gly Arg Ser Leu Arg
145 150 155 160

Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr Gly Met His
165 170 175

Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Val Ile
180 185 190

Ser Tyr Asp Gly Ser Asn Lys Tyr Tyr Ala Asp Ser Val Lys Gly Arg
195 200 205

Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr Leu Gln Met
210 215 220

Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys Ala Lys Asp
225 230 235 240

Met Gly Trp Gly Ser Gly Trp Arg Pro Tyr Tyr Tyr Gly Met Asp
245 250 255

Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Thr Pro Leu
260 265 270

Gly Asp Thr Thr His Thr Ala Ser Thr Lys Gly Pro Ser Val Phe Pro
275 280 285

Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly
290 295 300

Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn
305 310 315 320

Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val Leu Gln
325 330 335

Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser
340 345 350

Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro Ser
355 360 365

Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys Asp Lys Thr
370 375 380

Ser Gly Gly Gly Ser Ala Pro Ala Arg Ser Pro Ser Pro Ser Thr
385 390 395 400

Gln Pro Trp Glu His Val Asn Ala Ile Gln Glu Ala Arg Arg Leu Leu
405 410 415

Asn Leu Ser Arg Asp Thr Ala Ala Glu Met Asn Glu Thr Val Glu Val
420 425 430

Ile Ser Glu Met Phe Asp Leu Gln Glu Pro Thr Cys Leu Gln Thr Arg
435 440 445

Leu Glu Leu Tyr Lys Gln Gly Leu Arg Gly Ser Leu Thr Lys Leu Lys
450 455 460

Gly Pro Leu Thr Met Met Ala Ser His Tyr Lys Gln His Cys Pro Pro
465 470 475 480

Thr Pro Glu Thr Ser Cys Ala Thr Gln Ile Ile Thr Phe Glu Ser Phe
485 490 495

Lys Glu Asn Leu Lys Asp Phe Leu Leu Val Ile Pro Phe Asp Cys Trp
500 505 510

Glu Pro Val Gln Glu His His His His His
515 520

<210> 38
<211> 1630
<212> DNA
<213> Homo sapiens/Mus musculus

<220>
<221> CDS
<222> (39)..(1610)

<400> 38
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Met Gly Trp Ser Cys Ile
1 5

atc ctc ttc ttg gta gca aca gct aca ggt gta cac tcc gag ctc cag 104
Ile Leu Phe Leu Val Ala Thr Ala Thr Gly Val His Ser Glu Leu Gln
10 15 20

atg acc cag tct cca tcc tcc ctg tct gca tct gta gga gac aga gtc 152
Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val
25 30 35

acc atc act tgc cgg gca agt cag agc att agc agc tat tta aat tgg 200
 Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Ser Ser Tyr Leu Asn Trp
 40 45 50

 tat cag cag aaa cca gga cag cct cct aag ctg ctc att tac tgg gca 248
 Tyr Gln Gln Lys Pro Gly Gln Pro Pro Lys Leu Leu Ile Tyr Trp Ala
 55 60 65 70

 tct acc cgg gaa tcc ggg gtc cct gac cga ttc agc ggc agt gaa tct 296
 Ser Thr Arg Glu Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Glu Ser
 75 80 85

 ggg aca aat tac act ctc acc atc agc agc ctg cag cct gaa gat ttt 344
 Gly Thr Asn Tyr Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe
 90 95 100

 gct act tac ttt tgt caa cag tct gac agt ttg ccg atc acc ttc ggc 392
 Ala Thr Tyr Phe Cys Gln Gln Ser Asp Ser Leu Pro Ile Thr Phe Gly
 105 110 115

 caa ggg aca cga ctg gac att caa gga gga gga tca ggt ggt ggt 440
 Gln Gly Thr Arg Leu Asp Ile Gln Gly Gly Ser Gly Gly Gly
 120 125 130

 ggt agc ggc ggc ggc tca gag gtg cag ctg ctc gag tct ggg gga 488
 Gly Ser Gly Gly Ser Glu Val Gln Leu Leu Glu Ser Gly Gly
 135 140 145 150

 ggc gtg gtc cag cct ggg agg tcc ctg aga ctc tcc tgt gca gcc tct 536
 Gly Val Val Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser
 155 160 165

 gga ttc acc ttc agt agc tat ggc atg cac tgg gtc cgc cag gct cca 584
 Gly Phe Thr Phe Ser Ser Tyr Gly Met His Trp Val Arg Gln Ala Pro
 170 175 180

 ggc aag ggg ctg gag tgg gtg gca gtt ata tca tat gat gga agt aat 632
 Gly Lys Gly Leu Glu Trp Val Ala Val Ile Ser Tyr Asp Gly Ser Asn
 185 190 195

 aaa tac tat gca gac tcc gtg aag ggc cga ttc acc atc tcc aga gac 680
 Lys Tyr Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp
 200 205 210

 aat tcc aag aac acg ctg tat ctg caa atg aac agc ctg aga gct gag 728
 Asn Ser Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu
 215 220 225 230

 gac acg gct gtg tat tac tgt gcg aaa gat atg ggg tgg ggc agt ggc 776
 Asp Thr Ala Val Tyr Tyr Cys Ala Lys Asp Met Gly Trp Gly Ser Gly
 235 240 245

 tgg aga ccc tac tac tac tac ggt atg gac gtc tgg ggc caa ggg acc 824
 Trp Arg Pro Tyr Tyr Tyr Gly Met Asp Val Trp Gly Gln Gly Thr
 250 255 260

 acg gtc acc gtc tcc tcc gga acc ccg ctg ggt gac acc acc cac acc 872
 Thr Val Thr Val Ser Ser Gly Thr Pro Leu Gly Asp Thr Thr His Thr
 265 270 275

cgt acg gtg gct gca cca tct gtc ttc atc ttc ccg cca tct gat gag		920
Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu		
280	285	290
cag ttg aaa tct gga act gcc tct gtt gtg tgc ctg ctg aat aac ttc		968
Gln Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe		
295	300	305
310		
tat ccc aga gag gcc aaa gta cag tgg aag gtg gat aac gcc ctc caa		1016
Tyr Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln		
315	320	325
tcg ggt aac tcc cag gag agt gtc aca gag cag gac agc aag gac agc		1064
Ser Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser		
330	335	340
acc tac agc ctc agc agc acc ctg acg ctg agc aaa gca gac tac gag		1112
Thr Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu		
345	350	355
aaa cac aaa gtc tac gcc tgc gaa gtc acc cat cag ggc ctg agc tcg		1160
Lys His Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser		
360	365	370
ccc gtc aca aag agc ttc aac agg gga gag tgt tca gga ggc ggt ggg		1208
Pro Val Thr Lys Ser Phe Asn Arg Gly Glu Cys Ser Gly Gly Gly		
375	380	385
390		
tct gca cct act tca agt tct aca aag aaa aca cag cta caa ctg gag		1256
Ser Ala Pro Thr Ser Ser Thr Lys Lys Thr Gln Leu Gln Leu Glu		
395	400	405
cat tta ctg ctg gat tta cag atg att ttg aat gga att aat aat tac		1304
His Leu Leu Asp Leu Gln Met Ile Leu Asn Gly Ile Asn Asn Tyr		
410	415	420
aag aat ccc aaa ctc acc agg atg ctc aca ttt aag ttt tac atg ccc		1352
Lys Asn Pro Lys Leu Thr Arg Met Leu Thr Phe Lys Phe Tyr Met Pro		
425	430	435
aag aag gcc aca gaa ctg aaa cat ctt cag tgt cta gaa gaa gaa ctc		1400
Lys Lys Ala Thr Glu Leu Lys His Leu Gln Cys Leu Glu Glu Glu Leu		
440	445	450
aaa cct ctg gag gaa gtg cta aat tta gct caa agc aaa aac ttt cac		1448
Lys Pro Leu Glu Val Leu Asn Leu Ala Gln Ser Lys Asn Phe His		
455	460	465
470		
tta aga ccc agg gac tta atc agc aat atc aac gta ata gtt ctg gaa		1496
Leu Arg Pro Arg Asp Leu Ile Ser Asn Ile Asn Val Ile Val Leu Glu		
475	480	485
ctc aag gga tct gaa aca aca ttc atg tgt gaa tat gct gat gag aca		1544
Leu Lys Gly Ser Glu Thr Thr Phe Met Cys Glu Tyr Ala Asp Glu Thr		
490	495	500
505	510	515
gca acc att gta gaa ttt ctg aac aga tgg att acc ttt tgt caa agc		1592
Ala Thr Ile Val Glu Phe Leu Asn Arg Trp Ile Thr Phe Cys Gln Ser		

atc atc tca aca cta act tgataagtcg acttaaaaaca 1630
Ile Ile Ser Thr Leu Thr
520

<210> 39
<211> 524
<212> PRT
<213> Homo sapiens/Mus musculus

<400> 39
Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly
1 5 10 15
Val His Ser Glu Leu Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala
20 25 30
Ser Val Gly Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile
35 40 45
Ser Ser Tyr Leu Asn Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro Lys
50 55 60
Leu Leu Ile Tyr Trp Ala Ser Thr Arg Glu Ser Gly Val Pro Asp Arg
65 70 75 80
Phe Ser Gly Ser Glu Ser Gly Thr Asn Tyr Thr Leu Thr Ile Ser Ser
85 90 95
Leu Gln Pro Glu Asp Phe Ala Thr Tyr Phe Cys Gln Gln Ser Asp Ser
100 105 110
Leu Pro Ile Thr Phe Gly Gln Gly Thr Arg Leu Asp Ile Gln Gly Gly
115 120 125
Gly Gly Ser Gly Gly Ser Gly Gly Gly Ser Glu Val Gln
130 135 140
Leu Leu Glu Ser Gly Gly Val Val Gln Pro Gly Arg Ser Leu Arg
145 150 155 160
Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr Gly Met His
165 170 175
Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Val Ile
180 185 190
Ser Tyr Asp Gly Ser Asn Lys Tyr Tyr Ala Asp Ser Val Lys Gly Arg
195 200 205
Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr Leu Gln Met
210 215 220
Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys Ala Lys Asp
225 230 235 240
Met Gly Trp Gly Ser Gly Trp Arg Pro Tyr Tyr Tyr Gly Met Asp
245 250 255

Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Thr Pro Leu
260 265 270

Gly Asp Thr Thr His Thr Arg Thr Val Ala Ala Pro Ser Val Phe Ile
275 280 285

Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly Thr Ala Ser Val Val
290 295 300

Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala Lys Val Gln Trp Lys
305 310 315 320

Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln Glu Ser Val Thr Glu
325 330 335

Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser Ser Thr Leu Thr Leu
340 345 350

Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr Ala Cys Glu Val Thr
355 360 365

His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser Phe Asn Arg Gly Glu
370 375 380

Cys Ser Gly Gly Gly Ser Ala Pro Thr Ser Ser Ser Thr Lys Lys
385 390 395 400

Thr Gln Leu Gln Leu Glu His Leu Leu Leu Asp Leu Gln Met Ile Leu
405 410 415

Asn Gly Ile Asn Asn Tyr Lys Asn Pro Lys Leu Thr Arg Met Leu Thr
420 425 430

Phe Lys Phe Tyr Met Pro Lys Lys Ala Thr Glu Leu Lys His Leu Gln
435 440 445

Cys Leu Glu Glu Leu Lys Pro Leu Glu Glu Val Leu Asn Leu Ala
450 455 460

Gln Ser Lys Asn Phe His Leu Arg Pro Arg Asp Leu Ile Ser Asn Ile
465 470 475 480

Asn Val Ile Val Leu Glu Leu Lys Gly Ser Glu Thr Thr Phe Met Cys
485 490 495

Glu Tyr Ala Asp Glu Thr Ala Thr Ile Val Glu Phe Leu Asn Arg Trp
500 505 510

Ile Thr Phe Cys Gln Ser Ile Ile Ser Thr Leu Thr
515 520